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ABSTRACT

This study examines the need for programs for the disadvantaged child in Newfoundland, and illustrates what directions such programs must take to be effective. A sample was taken of 120 children in grades 1, 3, and 5 of two schools. The family background variables examined were father's and mother's occupation and education, the number of children in the family, and the household composition. To sample a range of behaviors related to school success, the Wechsler Intelligence Scale (Revised), the Illinois Test of Psycholinguistic Abilities, and the Concept Assessment Test were administered to all subjects. Parent interviews were conducted to understand the relationship of the home environment to school success. Language models of the home, and other family influences on academic achievement of children were studied. It is concluded that the sample of children from one of the schools shows environmental impoverishment. To compensate for this disadvantagement, program goals for such children are suggested. A program entitled Language Time is explained and some sample lessons for this program are presented. (Author/AM)

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PROGRAMS FOR THE DISADVANTAGED – DO WE NEED THEM?

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PROGRAMS FOR THE DISADVANTAGED - DO WE NEED THEM?

My topic for today deals with programs for the disadvantaged child, the purpose being to demonstrate that there is a systematic need for such programs in Newfoundland. Further, I hope to illustrate what directions such programs must take if they are to be effective. First let us begin with a definition of disadvantaged. What group of children are we referring to? Essentially we refer to those children who would be classed as low socioeconomic or children coming from impoverished environmental circumstances. With no known exceptions studies of low socioeconomic children between the ages of 3-6 have shown them to be retarded in intellectual abilities. This retardation is not always large but it exists when these children are compared to average children. The differences are largest in those abilities most relevant to school success, especially language abilities, as will be shown by the data to be presented, and extends beyond 6 years of age. The disadvantaged child is typically a year behind the average child in terms of language development; vocabulary size, sentence length and use of grammatical structure. As well they are behind in the development of reasoning ability or logical development (Taylor, et al., 1974; Jones, 1971). Overall the research shows a clear picture of retardation in terms of language and intellectual abilities in low socioeconomic children (Bereiter and Engelmann, 1966).

The question can legitimately be raised as to whether these findings can be generalized to the Newfoundland school population. In order to test these findings samples were chosen from two schools

outside the St. John's area. The sample consisted of 120 children, 60 children each from Schools 1 and 2. Of the 60 children, 20 children were chosen from each of grades 1, 3 and 5 in the two schools. The family background variables examined in the present research were: father's and mother's occupation, father's and mother's education, whether or not both parents were living in the home, the number of other adults living in the home, the number of children in the family and the number of children living at home. Table 1 presents a complete description of the sample by school and grade with respect to these background variables.

Insert Table 1 about here

For Grades one and three the following results were found. The School 1 fathers had a significantly higher education and occupation than the School 2 fathers. Although the School 1 mothers had a significantly higher education than the School 2 mothers, the mothers of the Grade one children did not differ significantly in occupation. This was due to the fact that the majority of mothers in both samples were housewives. For the Grade three sample the School 1 mothers had a significantly higher occupation rating than the School 2 mothers. There were no significant differences in whether both the parents were living in the home or the total number of adults in the home. The School 2 group did have significantly

larger families and significantly more children living in the home.

The Grade five School 1 sample was somewhat atypical when compared to the Grades one and three samples. Although School 1 fathers and mothers had significantly more education than the School 2 sample neither the father's nor mother's occupation was rated as higher. This can be understood in the mother's case as they were housewives. However, in the case of the School 1 fathers they had occupations that rated lower on the Blishen Scale and were similar to the School 2 sample. There were no significant differences in whether the parents were living in the home or the number of adults in the home. There was also no significant difference in the number of children or in the number of children living at home. Overall, the Grade five School 1 sample is more similar, at least in family background variables, to the School 2 Grade five sample than it is to either the Grade one or Grade three School 1 sample.

I think it is evident that the two samples, with the possible exception of the Grade five's are clearly from distinct socio-economic groups with the School 2 group being identified clearly as a low socioeconomic group and the School 1 group being identified as a middle class group although in the lower ranges.

Measurement

To sample as wide a range of behavior, related to school success, the following tests were administered individually to all

subjects: Wechsler Intelligence Scale for Children - Revised (WISC-R), Illinois Test of Psycholinguistic Abilities (ITPA), and the Concept Assessment Test. As well a detailed family interview was conducted with the mothers of the children involved. A brief description of the measures follows:

WESCHSLER INTELLIGENCE SCALE FOR CHILDREN - REVISED

The WISC-R measures various aspects of intelligence that are related to school success. It has both verbal and non-verbal subtests.

VERBAL TESTS

INFORMATION

A measure of the amount of general knowledge a child possesses. It includes questions as varied as "How many ears do you have?", "What do we call a baby cow?" to "How many days make a week?"

SIMILARITIES

Tests whether a child can tell how various things are both similar and different. For example, "In what way are a wheel and a ball alike?"

ARITHMETIC

A measure of the child's ability to utilize abstract concepts of number and numerical operations. For example, "If I cut an apple in half, how many pieces will I have?"

VOCABULARY

Tests how many words a child knows. It includes a series of words from "knife" to "dilatory" and the child is asked what each word means.

COMPREHENSION

Measures a child's knowledge of fairly common principles. For example, "What is the thing to do when you cut your finger ?" A measure of practical judgement.

DIGIT SPAN (Supplementary Verbal Test)

This is a measure of immediate auditory recall or immediate auditory memory span. The child has to repeat a series of digits after the tester has said them. In the first part they are to be repeated in the same order, while in a second part they are asked to repeat the series backwards.

PERFORMANCE TESTS

PICTURE COMPLETION

Measures the ability to isolate essential and non-essential characteristics. Twenty-six cards of common objects are presented. Each object has a part missing and the child is asked which part is missing.

PICTURE ARRANGEMENT

Tests the ability to evaluate what is going on in a particular picture and to then place it logically in relation to other pictures so that a sensible and consistent story emerges.

BLOCK DESIGN

A good measure of logic, reasoning and space relationships. The child is shown a pattern made of red and white blocks. He is given his own blocks and asked to reproduce the design.

OBJECT ASSEMBLY

Tests perception visual-motor coordination, and simple assembly skills. The child is presented with several pieces which he must arrange into a common object (girl, horse, car, face).

CODING

This test measures visual-motor dexterity, particularly pencil manipulation. It also calls for the ability to absorb new material presented in an associative context.

MAZES (Supplementary Performance Test)

A measure of planning and attention. The child is presented with simple mazes.

ILLINOIS TEST OF PSYCHOLINGUISTIC ABILITIES

The ITPA measures a number of aspects of linguistic ability and consists of the following subtests:

AUDITORY RECEPTION

This test assesses the child's ability to derive meaning from verbally presented material (e.g. Do dials yawn? Do cats bark?)

VISUAL RECEPTION

This test measures the child's ability to gain meaning from visual symbols. The child is shown a stimulus picture and is then

asked to choose an object or situation which is conceptually similar to the stimulus.

VISUAL SEQUENTIAL MEMORY

This test assesses the child's ability to reproduce sequences of nonmeaningful figures from memory. The child is shown each sequence of figures and then is asked to put corresponding chips of figures in the same order from memory.

AUDITORY ASSOCIATION

This test taps the child's ability to relate concepts presented orally. A sentence completion technique is used, presenting one statement followed by an incomplete analygous statement allowing the child to complete the second statement appropriately. (e.g., I cut with a saw; I pound with a _____).

AUDITORY SEQUENTIAL MEMORY

This test assesses the child's ability to reproduce from memory sequences of digits increasing in length from 2 to 8 digits. The digits are presented at a rate of 2 per second.

VISUAL ASSOCIATION

This test assesses the child's ability to relate concepts presented visually. The child is presented with a single stimulus picture surrounded by four optional pictures, one of which is associated with the stimulus picture.

VISUAL CLOSURE

This test assesses the child's ability to identify a common object from an incomplete visual presentation. There are 4 scenes, presented separately, each containing 14-15 examples of a specified object. The objects are seen in varying degrees of concealment. The child is asked to see how quickly he can point to all examples of a particular object within the time limit of 30 seconds.

VERBAL EXPRESSION

The purpose of this test is to assess the ability of the child to express his own concepts vocally. The child is shown four familiar objects one at a time (a ball, a block, an envelope, and a button) and is asked to tell all he knows about that object.

GRAMMATIC CLOSURE

This test assesses the child's ability to make use of the redundancies of oral language. The task elicits the child's ability

to respond automatically to often repeated verbal expressions of standard English. The child comes to expect or predict the grammatic form so that when part of an expression is presented he closes the gap by supplying the missing part. (e.g. Here is a dog; here are two _____., This dog likes to bark; here he is _____).

MANUAL EXPRESSION

This test taps the child's ability to express ideas manually. In this test 15 pictures of common objects are shown to the child one at a time and he is asked to show (using his hands and other body parts) what is done with each. The objects include a telephone, a guitar, a camera, a knife and fork, a suitcase, a comb and mirror, a cigarette and matches, and a stethoscope. The child is required to pantomine the appropriate action.

AUDITORY CLOSURE

This test assesses the child's ability to fill in missing parts which were deleted in auditory presentation and to produce a complete word. The child is asked, "What am I talking about?" bo/le, tele/one. There are 30 items ranging in difficulty from easy words to more difficult ones.

SOUND BLENDING

The sounds of a word are spoken in isolation at half second intervals and the child is asked to tell what the word is.

CONCEPT ASSESSMENT KIT - CONSERVATION

This test measures the child's ability to conserve, i.e., to recognize that certain properties such as substance weight, volume or number remain unchanged in the face of certain transformations of an object's form, shape, color or position.

According to Piaget's theory the concept of conservation is an important intellectual attribute which signals the transition from a prelogical to a logical mode of thought.

ANALYSIS

The analysis conducted was a multivariate analysis of variance

(MANOVA) following a technique developed by David S. Poor (1969). This program indicates whether the main effects and interactions are significant. To further analyze the data a series of Tukey "b" tests were conducted using the information from the MANOVA output. The Tukey "b" test is a test of multiple comparisons which indicates significant differences between groups on the various subtests.

RESULTS AND DISCUSSION

Grade One

Table 2 presents the means of the raw scores on the WISC-R for the samples and also indicates whether the means differ significantly. Table 3 presents the mean scaled scores on the WISC-R.

Insert Table 2 about here

As indicated on all of the subtests, the School 1 group scored significantly higher. Since the WISC-R measures abilities that are closely related to school success especially on the verbal subtests, it would be predicted that the School 2 sample would meet with little success in the present school system. What is particularly surprising is that the School 2 sample does so poorly on the non-verbal items. Typically low SES children score better on non-verbal items. However, this is not the case for the present

sample as indicated by the mean scaled scores for the WISC-R presented in Table 3. After examining the home environment data, to

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Insert Table 3 about here

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be discussed later, it is hypothesized that the early environment for the School 2 sample is so impoverished that the level of development of non-verbal and verbal intelligence is severely retarded.

The results relating to the ITPA are presented in Table 4.

Insert Table 4 about here

As with the WISC-R, on all but one subtest, the School 2 group scores significantly lower than the School 1 group. It is perhaps worthwhile to note that the School 1 group is by no means functioning at a superior level. Rather they function at roughly an average level over most of the tests. Thus in comparison, the School 2 sample functions at a below average level. Since success in present school programs tends to be largely determined by intellectual and linguistic abilities there should be little surprise expressed if the School 2 children have great difficulty functioning in the present school system. They simply do not possess the abilities to make them successful.

The conservation results presented in Table 5 follow a similar pattern. In all but one subtest the School 2 sample can be classified

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Insert Table 5 about here

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as non-conservers. This has important implications for a Grade one math program as many programs or aspects of a particular program are based on the assumption that children are functioning at an operational level of thought. If an examination of the math program being used indicates that the ability to conserve is important, then it would be expected that the Grade one School 2 sample would experience a great deal of difficulty with it.

Grade Three

For the WISC-R and the ITPA the results are essentially the same as the Grade one results. As shown in Tables 2 and 4 the School 1 sample scores significantly higher on all but two subtests. What is particularly interesting is that an examination of scaled scores, which take age into account, shows that over most of the subtests there is little gain in either of the samples. As the School 1 sample is functioning at an average level this presents little problem. However, one would expect the School 2 sample which in Grade one is functioning well below the average level, to benefit from school and increase their level of intellectual and linguistic functioning as a result of their school experience. On most subtests of the WISC-R and ITPA this is clearly not the case. The School 2 Grade three's are still functioning at much the same level as the Grade one's. In other words school has done little to increase their level of intellectual or linguistic functioning. In

the opinion of the author this is largely due to the fact that the curriculum during Kindergarten, Grades one and three is totally inappropriate to bring about any meaningful change in the abilities of the children. If this situation is to be improved radical changes need to be made in the curriculum during the early years of school. If the changes are not made you will continue to see the problems of school failure that presently exist .

In regard to the measures of conservation there are no significant differences between the groups. The School 2 group is conserving equally as well as the School 1 group. Both groups are conserving well by grade three in that in most instances they conserve on over 75% of the test items. Hence, there has been a substantial gain especially in the School 2 group on conservation abilities. However, these gains may have little to do with the effects of schooling as it has been argued that the development of operational thought is largely due to maturational factors.

Grade Five

The results for the WISC-R indicate that the School 2 children have made gains on three subtests when compared to the School 1 group. However, overall they are still functioning at a below average level. Overall the School 2 Grade five's have made no substantial gains as compared to the School 2 Grade one's as is shown by the scaled scores. This is in spite of the fact that they are functioning below average and should gain in intellectual skills as a result of school experience if the school is adequately doing its job.

The results for the ITPA indicate that they have largely caught up to the Sample 1 Grade five's. However, the Sample 1 Grade five's are not functioning at a comparable level to the Grade one's and three's as shown by the scaled scores presented in Table 6. However, the scaled scores must be interpreted with

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Insert Table 6 about here

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some caution as a number of the sample were too old to scale with a resulting decrease in sample size. Overall then, it is fair to say that by Grade five the School 2 sample functions at a level similar to the School 1 sample in some areas of linguistic functioning. However, it must be remembered that the Grade five School 1 sample is somewhat atypical when compared to the Grades one and three samples from that school.

FAMILY ENVIRONMENT VARIABLES

As part of the research, parent interviews were conducted in order to provide an understanding of the home environment as it relates to school success. Six environmental variables, that have been identified in the research as relating to intellectual competency and school success were examined. They were: achievement press, language models of the home, academic guidance provided by the home, activeness of the family, intellectuality of the home and work habits of the family. A brief description of these variables and results follows. The results are presented in Table 7.

Insert Table 7 about here

ACHIEVEMENT PRESS

a. Parental Aspirations for the Education of the Child.

- nature of the educational and vocational goals
- level of expectation of the educational accomplishments

b. Parents' Own Aspirations

- present accomplishments
- means of the accomplishments
- future aspirations

c. Parents' Interest in Academic Achievement

- extent of participation in the educational activities
- keeness for the educational progress of the child

d. Social Press for Academic Achievement

- education of the close relatives, parents, friends and neighbours
- education of their children

e. Standards of Reward for Educational Attainment

- valuing academic accomplishments
- selection of gifts having educational value

f. Knowledge of the Educational Progress of the Child

- extent of knowledge of the child's educational progress
- extent of knowledge of the textbooks used by the child and his courses of study

g. Preparation and Planning for the Attainment of Educational Goals

- financial preparation
- academic and mental preparation

The School 1 families at all three grade levels scored significantly higher than those of the School 2 sample on this variable.

Thus as a group the School 1 parents place more stress on academic achievement than the School 2 parents. This might best be illustrated by a comment made by one mother when asked how far she expected her child to go in school. The mother replied, "If he has to go to school until his hair is grey he is at least going to finish high school". Thus, in the School 1 sample there is a much greater emphasis on being successful in school and achieving a good education than in the School 2 group. These values, of course, are passed on to the children who probably accept the value parents place on education.

LANGUAGE MODELS

a. Quality of the Language Usage of the Parents

- fluency of expression
- pronunciation
- vocabulary
- organization of thoughts

(This was noted from the conversation with the mother during the interview).

b. Opportunities for the Enlargement and Use of Vocabulary and Sentence Patterns

- variety of opportunities
- frequency of opportunities

c. Keenness of the Parents for Correct and Effective Language Usage
- regularity in reading to the child during preschool period
- variety of efforts for increasing vocabulary and correcting language usage, if needed.

At all three grade levels the School 1 families scored significantly higher than those of the School 2 sample. As a result, there is more press within the School 1 families for the development of apparopriate forms of speech than in the School 2 families.

Thus it would be expected that the School 1 sample would develop language skills which allow them to be more successful in school as the school situation is so linguistically orientated. The importance of language models is evident when one examines the verbal scores of the WISC-R and the ITPA. On the whole the School 2 sample can probably be characterized as language retarded, at least in the style of language that relates to school success. It is evident that the family background contributes to this fact. Considerable research has been done with the language retarded child and there are effective methods of dealing with this problem.

ACADEMIC GUIDANCE

a. Availability of Guidance on Matters Relating to School Work
   - extent of general supervision regarding school work
   - readiness in guidance when asked for
   - suggestions regarding school work

b. Quality of Guidance on Matters Relating to School Work
   - relevance to the specific educational needs of the child
   - consistency
   - competence

c. Availability and Use of Materials and Facilities Related to School Learning
   - selection of the material
   - guidance for the use of the material and educational facilities

At all three grade level the School 1 sample scored significantly higher than the School 2 sample. The School 1 parents are more interested and aware of the importance of providing guidance to their children on school-related matters than the School 2 parents. This may be due to the fact that the School 2 parents

simply do not have the education and knowledge to provide this guidance to their children. This problem can be remedied by involving parents in various ways with a very specialized kindergarten program which encourages parents to become involved in the education of their children.

ACTIVENESS OF FAMILY

a. The Extent and Content of Indoor Activities of the Family

- variety
- frequency
- educational value

b. The Extent and Content of Outdoor Activities during Weekends and Vacations

- variety
- frequency
- educational value

c. Use of T.V. and Such Other Media

- purpose of the use
- extent of the use

d. Use of Books, Periodical Literature, Library and Such Other Facilities

- variety of material used by the family members
- encouragement to the child for the use of such material

Essentially this variable deals with the type of activity that a family undertakes together and the materials utilized during this activity. In the present case the School 1 families make use of activities and materials that are more educationally orientated than the School 2 group. In light of the findings relating to other family variables this result was expected.

INTELLECTUALITY OF THE HOME

a. Nature and Quality of Toys, Games, and Hoobies made Available to the Child

- thought-provoking element in the toys
- variety

b. Opportunities for Thinking and Imagination in Daily Activities

- variety
- level of complexity
- extent of encouragement for independent thinking

Once again at all three grade levels the School 1 sample scored significantly higher than the School 2 group. The School 1 parents encourage and provide opportunities for their children to undertake intellectual activities in the home which in turn will further encourage the children to undertake the intellectual activities of the school. From the family variables examined so far a clear picture emerges of the School 1 parents stressing educationally oriented values and activities whereas the School 2 parents do not.

WORK HABITS OF THE FAMILY

a. Degree of Structure and Routine in the Home Management

- planning and distribution of work
- punctuality in following it

b. Preference for the Educational Activities Over Other Pleasurable Things

- priority to educational activities attached by the parents
- continuity of academic activities

In the terms of this aspect of family environment only the Grade one School 1 sample differs significantly from the School 2

sample. This finding for the Grades three and five is inconsistent with the previous findings. The reasons for this can only be suggested. The finding may be due to chance or perhaps the environmental scale was not sensitive enough to discover any differences that might exist. However, these are only suggested reasons and no definite conclusion can be drawn on the basis of the present research.

It is evident that the sample of children from School 2 represented in the present study manifest the symptoms of environmental impoverishment. Their low scores on the tests given are indicative of this. Further, when the home environments are examined it is clear that environmental impoverishment exists. The effects of the home are manifested in the low level functioning of the children. Research indicates that these are the type of children that meet with little success in the standard school system. What is needed is a specialized program which begins at the kindergarten level. This program must involve the home as well, if any real changes are to occur. It is clear that the present curriculum offered is totally inadequate to meet the needs of these children. Further, it is the author's opinion that these results are indicative of the situation across the province rather than being restricted to the two schools in question.

If the point is accepted that many Newfoundland children in the low SES group lag behind other children in a number of developmental aspects, then it follows that they must learn at a faster than normal rate if they are to catch up. This may not be a popular

conclusion but there is no way to contradict it unless it is denied that the disadvantaged child is behind or unless it is denied that it is important for them to catch up. To deny the first point is to contradict the total body of evidence available. While to deny the second point dooms the disadvantaged child (the children in School 2) to perpetual school failure. Even more basic the child is doomed to failure in a society that places great emphasis on educational qualifications. Thus, the only real issue open to question is what the nature of this faster than normal progress should be. In other words, how can learning be accelerated to a greater than normal rate?

SELECTION AND EXCLUSION OF PROGRAMS

If a child is retarded one year, as most disadvantaged children are, and there is only one year of kindergarten experience to make up the deficit the child must learn at twice the normal rate to catch up. To be able to do this one must limit the objectives of the program to learning experiences that will promote school success. In other words there must be an academic emphasis to the exclusion of the so-called whole child approach characteristic of many kindergarten programs. Although concern with the child's overall development is commendable there are several flaws in this approach for the disadvantaged child.

1. It fails to consider the child's future. A program that is so concerned about the whole child that it destroys his future is not meeting the needs of the child. The threat of school failure is so great that unless it is wiped out it will cancel any gains in emotional health or social adjustment.

2. The idea that to produce a well rounded child it is necessary to have a well rounded program reveals ignorance of the fact that a world exists outside the school door. Children need social interaction but they can experience it outside the school. School should teach the disadvantaged child specific skills which allow him to be successful in school.

3. The teacher who tries to extend herself to meet all the needs of her children extends herself beyond her competency to areas of social work, counselling and even medicine. There are professionals who deal with these areas and the teacher should be primarily concerned with her task of promoting learning.

PROGRAM GOALS FOR THE DISADVANTAGED CHILD

Any program must have goals and the goals should depend largely on the present state of knowledge of the children. The following goals have been used in a program with severe linguistically retarded children. These are minimal goals and are presented here not to say that they will be acceptable for every group of children but to provide examples of goals that have been found to be useful.

MINIMUM GOALS

1. Ability to use both affirmative and NOT statements in reply to the question "What is this?" "This is a ball. This is not a book."

2. Ability to use both affirmative and NOT statements in response to the command "Tell me about this _____ (ball, pencil, etc.)." "This pencil is red. This pencil is not blue."

3. Ability to handle polar opposites ("If it is not _____, it must be _____") for a number of concept pairs, e.g., big-little, up-down, long-short, fat-skinny.

4. Ability to use the following prepositions correctly in statements describing arrangements of objects: on, in, under, over, between. "Where is the pencil?" "The pencil is under the book."

5. Ability to name positive and negative instances for at least four classes, such as tools, weapons, pieces of furniture, wild animals, farm animals, and vehicles. "Tell me something that is not a weapon". "A cow is not a weapon." The child should also be able to apply these class concepts correctly to nouns with which he is familiar e.g., "Is a crayon a piece of furniture?" "No, a crayon is not a piece of furniture. A crayon is something to write with."

6. Ability to perform simple if-then deductions. The child is presented a diagram containing big squares and little squares. All the big squares are red, but the little squares are of various other colors. "If the square is big, what do you know about it?" "It is red."

7. Ability to use NOT in deductions. "If the square is little, what else do you know about it?" "It is not red".

8. Ability to use OR in simple deductions. "If the square is little, then it is not red. What else do you know about it?" "It's blue OR yellow".

9. Ability to name the basic colors, plus white, black and brown.

10. Ability to count aloud to 20 without help and to 100 with help at decade points (30, 40, etc.).

11. Ability to count objects correctly up to 20.

12. Ability to recognize and name the vowels and at least 15 consonants.

13. Ability to distinguish printed words from pictures.

14. Ability to rhyme in some fashion to produce a word that rhymes with a given word, to tell whether two words do or do not rhyme, or to complete unfamiliar rhyming jingles like "I had a dog, and his name was Abel; I found him hiding under the _____."

15. A sight-reading vocabulary of at least 10 words in addition to proper names, with evidence that the printed word has the same meaning for them as the corresponding spoken word. "What word is this?" "Cat". "Is this a thing that goes 'Woof-Woof'? "No, it goes 'Meow'."

ACHIEVING GOALS

Rather than trying to achieve these goals in an indirect fashion, the way many standard programs do, the most effective way is to plan activities which focus directly on the goals. Activities which disrupt this learning process must be curtailed. The following is an example provided by Bereiter and Engelmann (1971) to illustrate the teaching methods.

Presentation	Reasons
Teacher: (Presents picture of rifle) This is a _____.	She begins with no verbal explanation. Lengthy verbal preambles do not make learning easier or the material more meaningful to naive children. They simply bore the child or entertain him in a passive non-productive manner.
Child B: Gun.	She would have favoured the word RIFLE instead of GUN, but since GUN is correct and since the response was apparently the product of thinking, she uses GUN, and she praises the child.
Teacher: Good. It is a gun. Let's all say it: This is a gun. Again. This is a gun.	

A number of various teaching techniques have been shown to be effective with this type of structured program.

1. Work at different levels of difficulty at different times. The teacher should present tasks on four levels of difficulty.

   a) Require the child to point or locate the instance of the concept non-verbally, e.g., "show me which truck is bigger".

   b) Require the child to answer (1 word) yes/no questions about the presentation "Is this truck bigger?"

   c) Require the child to repeat the basic statements - Tell

me is this truck bigger than this truck?" "Give me the whole answer. "Yes, this truck is bigger than this truck."

d) Require the child to identify the relationship by producing the appropriate statement without the support of a directed question. "Tell me about this truck." The teacher should attempt to work at this level as much as possible.

2. Adhere to a rigid repetitive presentation pattern. This is especially important in the initial stages of the program. Use the same method of presentation consistently. For the highly verbal teacher it is sometimes a difficult job to adhere to memorize statements. However, the language deprived child is not familiar with the basic structure of language and the simplest pattern is a challenge to him. If the pattern of presentation is varied too often it will only serve to confuse the child.

3. Use unison responses. Don't work with individual children. Teachers can make use of the following rule of thumb,- when working with children individually the others in the class are learning very little. No individual aid should last longer than 30 seconds. If a child's turn at individual work takes longer than 30 seconds the task should be re-structured.

4. Require the children to speak in loud clear voices. The no noise axiom of many classrooms has no place in this program. Mumbling only serves to mask the deprived child's inability to talk properly. In requiring loud responses the teacher will meet with some resistance. However, she should be persistent and should not allow "small-voiced" responses, perhaps, by playing deaf. "John, you will have to speak up. I'm getting old and can't hear you."

5. Do not hurry the children. Often the language disadvantaged child amalgamates parts of the sentence, runs his words together so that he is virtually unintelligible. The teacher should moderate the tempo of the child's speech and emphasize correct pronunciation.

6. Use questions liberally. Questions are valuable because they call the child's attention to specific parts of a sentence. For the first several months the teacher should follow every statement with a string of questions. "The book is on the table. Where is the book?" "What is on the table? Is the book on the floor?" In answering questions like this the child learns both about the use of prepositions as well as the structure of sentences.

7. Use repetition. The disadvantaged child may take days to learn what a more fortunate child can learn in several sessions. The teacher should be aware of this and plan on going over basic statements sometimes hundreds of times. Further, the child will tend to forget those concepts he has great trouble learning. As a result skills should be reviewed daily. There is no substitute for repetition of basic teaching patterns.

8. Use short explanations. Since the deprived child does not possess a great deal of language knowledge, explanations should be short, one sentence explanations. Further, these explanations should take account of the child's present level of knowledge.

9. Use examples. When presenting a new concept don't make the mistake of presenting a limited number of objects and talking about these. If you are teaching the concept of 'long' and only present one object the child has no way of knowing whether 'long' refers to relative length or to some irrelevant detail such as the shape of the object. As a result it is necessary to present many examples of the concept "long".

10. Prevent incorrect responses. The teacher who anticipates an incorrect response before it occurs and short circuits it helps the child overcome chronic mistake patterns more quickly. The teacher can prevent guessing with statements such as, "Now, think", "Take it a step at a time." "What do you ask yourself first?"

11. Be completely unambiguous in correcting the children. If a child is asked to put a yellow pencil on the table and he puts a green one instead the teacher should make it perfectly clear that the child made an incorrect response. "No, that is not right. That is a green pencil not a yellow pencil." By responding in this fashion the teacher constantly directs the child's output and achieves relatively fast smooth learning. However, it should be noted that tasks should be structured so that children experience success much of the time.

12. Encourage thinking behavior. After correcting, the teacher should acknowledge that the child is operating in a way that will ultimately lead to success. "John is trying. He'll get it, you'll see. That is because he thinks so hard." Thus, the teacher is letting the child know that she approves of his behavior even if it sometimes leads to an incorrect response. Non-thinking behavior should also be discouraged in a positive way. "Did you try hard today"? "

"I don't think so. You fooled around a lot and didn't pay attention. But you are a smart boy and you can get it if you try. You come in tomorrow and really work, Okay".

13. Use concrete rewards. In many instances young children, both advantaged and disadvantaged, require concrete rewards, for example, smarties, when they achieve a correct response. Simple verbal reinforcement, such as "good boy", is not enough to keep children functioning at maximum levels. This is especially true of the disadvantaged child who has had no experience with formal education and does not appreciate a simple verbal reinforcement. By combining concrete rewards with verbal rewards disadvantaged children learn that verbal rewards are meaningful. However, verbal reinforcement should never totally replace concrete rewards.

Each of these relatively simple rules requires a great deal of skill to be handled appropriately by the teacher. No teacher possesses these skills as a natural gift but almost any teacher can acquire the necessary skills if given the appropriate training.

In some school situations teachers may not be able to implement or may feel uncomfortable with the extremely structured program. As a result the following activities have been developed by the author and Dr. Marie O'Neill to provide language enrichment for the disadvantaged child. A program based on these activities and entitled Language Time was utilized in one school and resulted in significant improvement in language ability in participating children. However, it should be noted that the project was only a pilot project and did not follow a true experimental design.

The philosophy is that Language Time should be a daily interlude from conventional school work. Thus the setting created for learning is as important as the specific materials presented. The following guidelines outline some of the particular points to follow in providing an atmosphere conducive to maximum oral language

development on the part of the children.

1. Be sure to make the lessons a game. It is important that they be viewed as a break from traditional school work, and as a time for more talk and activity than is usually allowed. The instructor's attitude is very contagious. Therefore, she is expected to join in the fun with smiles, laughter, supporting statements, etc. Above all, it is important that she be enthusiastic and energetic.

2. Language Time is intended to be a part of the total language arts program. It is not intended to replace the regular activities in daily use in the classroom, but rather to supplement them.

3. It is important to keep the attention of the children on the changing activities at all times.

4. Be sure to keep the activities pupil centered. The atmosphere should be one of allowing for more spontaneity in speech than during traditional course work. Encourage activities where the children take turns. <u>This is primarily a talking time for the children and not for the instructor</u>. The instructor's role is to include and involve all of the children - even the most retiring.

5. The instructor should reward the participation of each child. Even minimal performance should be reinforced with liberal praise. Many times this praise should be accompanied by a concrete reward such as a smarty. The instructor should correct failure but refrain from criticizing the behavior of the children. It is important to call attention to the success of individuals as well as to the group as a whole. Invidious comparisons among children's performance are to be avoided. If a child continually fails to live up to an instructor's expectations, this should be viewed as a failure on the part of the instructor for not designing an activity or asking a question that is within the child's repertoire so that he will be successful in performaing what is asked of him.

6. The instructor should stress overlearning. The lessons have been planned to provide repetition. After a child has successfully performed an act, it is extremely important that he have an opportunity to repeat it successfully a number of times. Practice, drill, and review are to be encouraged as long as the activities can be varied to sustain a high level of interest.

7. The teacher should group the children so she is working with no more than ten or eleven at a time.

The following pages suggest a program extending over three weeks. It is illustrative of what might be conducted over a period of months.

DAY 1:

a. Physical activity - purpose is to make the children feel at ease.

1. Wash our faces - water on hands, soap, wash, rinse.
2. Wash someone else's face.
3. Comb your hair.
4. Comb someone else's hair.

b. Two pictures and questions, discussion. Pictures such as those found in the P.P.V.T. Language Development Kit are useful. The questions only suggest ideas. Interject your own ideas. The purpose is to encourage free-flowing discussion among the students.

c. What am I doing wrong, and what will happen.

1. Tie your shoelaces together.
2. Bowl-spoon--pretend you are eating and put spoon to your ear.
3. Put your coat on backwards.
4. Open book, shut your eyes and read.

DAY 2:

a. Teacher describes himself (herself). I'm a man, I've got a shirt on. Ask children to tell you several things about themselves - ask other children to describe other characteristics of both teachers and children.

b. Two pictures.

c. Children are each given a picture of an animal in such a way as other children don't see it. Child then describes the animal and others attempt to guess what it is. Teacher should do an example first. Teacher may have to help children in their descriptions.

DAY 3:

a. Pretend you are what I tell you to be (to total group).

1. An old lady rocking in a chair.
2. Animals.
3. Be a little tree and grow.
4. Be a snow flake and fall down.

Any others you might think of - have the children suggest activities.

b. Two pictures.

c. What would you do if - discussion questions - try to get whole group to participate.

1. You found a piece of candy on the road.
2. You found some money on the road.
3. A boy or girl much smaller than yourself hits you.
4. Your mother sends you to the store to buy bread and there isn't any left.

d. Action pictures. Teacher and children describe the action; have children guess what action is occurring.

DAY 4:

a. Two pictures.

b. Talk about yourself, e.g., what do you do after school, what do you eat for breakfast, what is your favourite food, who is your favourite person, what do you do on Saturdays, T.V. shows you like, stories you like.

c. Mystery Bag. Bag remains closed so children cannot see what objects are in it. Each child picks up an object - describes it without looking at it and attempts to guess what it is. Teacher may have to suggest descriptive terms such as hard-soft, sharp-smooth, etc.

DAY 5:

a. Clothing Cards. Each child gets a picture of a piece of clothing, describes it, other children guess what it is. Once the description is complete turn over the pieces of clothing and see how many they can remember.

b. Two pictures.

c. Similarities.

1. Tell me all the words that start with "M".
2. What goes with this word?

bread -	dark - (or dirty)
mother -	chair -
pencil -	walk -
bat -	short -
comb -	dirty -
doctor -	hammer -
knife -	laugh -

3. How are these words alike?

sock - shoe	fur - hair
car - truck	coat - jacket
carrots - peas	box - bag
match - pipe	bed - pillow
smoke - chimney	lock - key
nickel - dime	cut - band-aid
red - blue	glove - mitten
horse - cow	pot - pan
happy - sad	plane - helicopter
clock - watch	sneeze - cough

DAY 6:

a. What am I doing wrong?

1. Hat on shoulder.
2. Comb your clothes
3. Drink out of a saucer.
4. Read a book upside down.
5. Write with wrong end of pencil.

b. Two pictures.

c. Ask questions.

1. I am going to the bank. Why?
2. I don't feel well. Why?
3. I am going to the dentist. Why?
4. I am going to the grocery store. Why?

d. Tool cards. Pass cards to children and keep them hidden. Ask child to describe tool without naming it, while others attempt to guess what it is.

DAY 7:

a. Mystery Bag (as before).

b. Two pictures.

c. Today we will be actors, e.g.

1. Sweep the floor
2. Wash your face
3. Swim.
4. Eat ice cream.
5. Hammer.
6. Put clothes out, etc.

DAY 8:

a. Animal Cards. Describe, others attempt to guess. Have the children make the sounds of the various animals. Turn over cards, see how many they can remember.

b. Two pictures.

c. Guess what I am looking at. (I spy with my little eye). Children should also have a turn.

DAY 9:

a. What would you do if:

1. You sat on a chair in the classroom and it broke?
2. You broke one of your friend's toys?
3. You saw somebody fall in the pond?
4. A building you and some friends were in started on fire?

b. Two pictures.

c. People Cards. Ask children to identify cards and what each person does.

DAY 10:

a. Two pictures.

b. Name everything you can think of that:

1. can be hauled in a truck
2. you can ride in
3. comes in glass bottles.

c. Simon Says:

Now listen and watch. See if you can do what Simon says to do. If I say Simon says clap your hands (demonstrate) you do it. But if I forget to say Simon says and just say clap your hands, you must not do what I say.

Simon says, "clap your hands".
Close your eyes.

Simon says, "stamp your feet".

Simon says, "stand up".
Sit down
Open your mouth.

Simon says, "cover your ears".
Simon says, "scratch your head".
Wiggle your fingers.

SUPPLEMENTARY ACTIVITIES:

A. Encourage children to talk about trips they have made, even if it is just a few blocks to a relative's house.

B. Critical Thinking Time. Say: How many of you have pockets in your clothes today? Let's count them. I'll keep score on the blackboard while we go around the circle (room). Have each child tell how many pockets he has. Let the girls tell how many pockets their coat has if they have none on otherwise. See how many we have altogether.

What do boys like to carry in their pockets? Do fathers carry those things too, or do they carry different things?

What do women carry things in when they have no pockets? (purse)

What do girls like to carry?

Can you carry an ice cream cone in your pocket? Why not?

Can you carry a kitten? What might happen?

Can you carry your hands? When would it feel good to keep them there?

Can you carry an egg? What might happen?

Can you carry a rock? (would depend on size)

Can you carry a fish? Why not?

Can you carry a fish hook? What might happen?

Can you carry a mosquito?

Can you carry your sister?

C. Following Directions Time. Give oral directions for the group to follow. Designate a reference to aid them in remembering which is right and which is left. (The hand on your side toward the window is your _____ hand, or take off right shoe, or a mark on their right hand with a felt marker, etc.)

1. Hold up your right hand.
2. Hop on your right foot.
3. Touch the person who is standing next to you on the right.
4. Touch your right ear with your left hand.
5. Place your left hand on your right elbow.
6. Hop on your left foot.
7. Bend your left knee up.
8. Touch your left eye with your right hand.
9. Touch your right eye with your left hand.
10. Touch your left leg with your left hand.
11. Put your right hand behind your back.
12. Put your left hand behind your back.

D. Read the children a story and then ask them questions about the story, e.g., Billy Goat Gruff.

E. Story Time. Tell children you have a story to read that has something to do with a trunk. Before reading explain what an Auction Sale is e.g., at an auction sale they sell something to the person who offers (bids) the most money for it. (Role play the selling of a pencil, a piece of chalk, an eraser, etc., to illustrate, then read the story).

THE BIG SURPRISE

One summer day, my brother and I went to an acution sale. Mother gave us a dollar to buy something. It was fun to see the man up on the stage sell things to people. He sold tables and chairs, beds, stoves, washing machines and even some pretty dishes, but everything seemed to cost more than a dollar. We decided we would go home, but just as we were leaving my brother tugged my arm and said, "Look they're selling an old trunk." I looked and sure enough the man was pointing to the trunk and then I heard him say, "Five dollars, who will bid five dollars for this fine old

locked trunk? No one answered. "How about four dollars? the man said. "Three dollars? Two dollars?" Still no one answered. Would the man be able to get two dollars? I held my breath. Then I heard the man say, "One dollar, who will give me one dollar for this locked trunk?" You may find anything in it. "One dollar, who will bid one dollar? I heard myself saying, "One dollar, I'll bid one dollar." "Sold," said the man.

My brother and I could hardly wait to get home to open our locked trunk. We used some old keys, a screwdriver, and a hammer. Finally, it was about to open.

What do you think we found? Or, what are some things that might be inside? Try to elicit some imaginative replies.

F. Listening Time. Say: I want you to listen for the name of a color. When you hear the name of a color, clap your hands. (Give example: read, ride, red).

Read across:

1.	hello	fellow	yellow	jello	
2.	Ted	said	red	sled	
3.	grow	great	greet	green	
4.	threw	blue	too	you	
5.	slack	black	tack	black	
6.	town	gown	brown	round	brown
7.	link	pink	new	threw	blue
8.	black	pack	tack	rack	sack	black

Name other sequences, as time permits.

G. Classification Time. Pronounce a series of four words including one that does not belong with others. Ask the children to tell which one does not belong and why. Repeat each series a second time immediately after the first reading. Have children name the three words that do belong together and tell why.

Read across:

1.	red	green	blue	hat
2.	cat	dog	mitten	rabbit
3.	boat	car	man	wagon

4.	orange	pear	bell	apple
5.	beet	potatoes	chair	tomato
6.	table	chair	sun	desk
7.	sun	moon	star	flower
8.	rose	peach	pear	apple
9.	pink	red	yellow	shoe
10.	dress	shirt	car	skirt

H. Touching - Memory Time. Give the following directions on how to play the "Memory Game". One child is "It". He touches an object in the room and calls another child who must touch the same object and then one more. He then calls another child's name who touches all objects that have been touched and adds one more. The game continues until so many objects have been touched that no player can successfully touch all objects in order. When a child misses, begin again by choosing another child to be "It" and have him start touching other objects.

I. Listening - Memory Time. Let the children sit in a circle. Whisper a sentence such as: "Lively Linda has a loose tooth", to a child. Let that child whisper what she heard to the next child and so around the circle. Let the last child say out loud what was whispered in his ear. Continue with new sentences until interest lags.

J. Story-Listening Time. Read the following Aesop fable to the children. Ask them to listen carefully because you will ask questions about the story.

THE HARE AND THE TORTOISE

Once upon a time a Hare met a Tortoise on a road that led to a pretty little town. "Good morning, Friend Tortoise," said the Hare. "Where are you going this fine day?"

"I'm going to the river that flows through the pretty little town," replied the Tortoise. "That is a long way off for someone who travels as slowly as you do," said the Hare. "If you could run as fast as I can, you would soon be there."

"I know I am slow," replied the Tortoise, "but, at that I might win a race from you." The very idea of running a race with the Tortoise made the Hare laugh and laugh. But at last he said, "I think it might be fun to run a race with you."

They asked the Fox to be the judge of their race. When they were ready, the Fox said, "One, two, three, go."

Upon hearing the word go, away they went. With a leap and a bound, the Hare was soon out of sight of the Tortoise. When he was about halfway to the river, he thought, "That Tortoise will never catch up to me. There is no need of hurrying any more. I shall rest here for a few moments." So he nibbled a little grass and sniffed about in a near-by clover field. Then he lay down and soon was asleep. After a time the Tortoise passed the sleeping Hare. He did not stop to look at him but kept moving steadily onward until he came to the river. When the Hare awakened, the Tortoise was nowhere in sight. "The Tortoise is certainly a slow creature," said the Hare. "I shall go back and look for him." After walking back some distance, the Hare was unable to find the Tortoise. When the Hare came hopping along to the river, there sat the Tortoise waiting for him. Beside him sat the Fox. "Well! Well! said the Fox. "Leaps and bounds do not always win a race. Slow and steady won this one."

Conclude by asking simple questions that relate to the story, e.g., Who was the judge of the race? Where was the Tortoise going when he met the Hare?

K. Relationships Time. Explain: I'm going to read some sentences to you. I will complete the first sentence and you will complete the second one. If you know the answer, you may raise your hand. The first one to complete the sentence may tell us something about the word that he used to finish the sentence. Instructor will read the following pairs of sentences.

1. Snow is cold.
   Fire is _____ (hot)
   (How do you know fire is hot?)

2. Sand is dry.
   Water is _____(wet)
   (How do you know water is wet?)

3. The sun shines in the day.
   The moon shines at _____(night)
   (How do the moon and stars help us at night?)

4. People walk.
   Birds _____ (fly)
   (What helps a bird fly?)

5. A dog is an animal.
   An apple is a _____(fruit)
   (What are some more fruits?)

6. A snail is slow.
   A rabbit is _____(fast)
   (What else is slow like a snail?)
   (What animal is faster than a rabbit?)

7. Dogs have hair.
   Birds have _____.(feathers)
   (Have you ever seen feathers being used for anything else?)

8. A tree is a plant.
   a giraffe is an _____. (animal)
   What other plants can you think of?
   (How is an animal different from a plant?
   Give the main difference. An animal moves under its own power).

9. Fish have scales.
   Chickens have _____.(feathers)
   (Name something else that has feathers).

The foregoing discussion presents several types of programs necessary for the school situation. However, if significant change is to occur there must be a significant home involvement as well. The data presented clearly shows the need for a change in parents' attitudes towards education. By getting the home involved in the educational process it is possible over a period of time to change the attitudes of the parents towards the school. It is possible to get the home involved through the cooperation of other persons associated with agencies such as the Department of Social Services (social workers) or the Department of Health (public health nurses). The following procedure can be utilized in home involvement. A

program providing daily activities for parents or an older sibling to undertake with the child is drafted. This program consists of simple activities that parents undertake to stimulate intellectual growth in their children. As they accomplish a certain activity they check it off on a check list. Weekly or bi-weekly when the social worker, public health nurse or field teacher visits, the check list is returned and the worker goes over the list with the parents to ensure that the tasks were covered and the goals achieved. A new list of daily activities is then given to the parents to cover the next two week period until the social worker or nurse makes a return visit. It must be stressed that these are simple activities that the worker can explain and demonstrate clearly to the parent. Research with home learning programs indicates that initially there is some hesitation on the part of parents and considerable encouragement and persuasion are necessary. However, once parents begin to see changes occurring in their children they become supporters of the program. As well, public meetings with the parents held in the school on a regular basis, at least once a month, to explain the program and the progress of the children in the program greatly facilitates the home learning program. Further, parents can be asked to contribute ideas to the program regarding learning activities that can be undertaken in the home. Low SES parents have generally felt isolated, frightened and ignorant of school programs. These parents, as the present research indicates, have had little success in the school system themselves. Although they are interested and concerned about their children they are not aware of the activities they can do with

their children to promote intellectual and linguistic development. Once they are made aware of these activities and put them into practice in conjuction with a specialized kindergarten program remarkable changes are likely to occur in the children. If educators wish to make any difference in the abilities of the deprived child then programs as described must be utilized. Research clearly indicates that it is only through direct teaching programs, and involvement with the home that the low SES child makes significant gains in school success. If principals, supervisors and teachers really want to make a difference to the disadvantaged child, to offer him not only a linguistic but also an educational and vocational choice, then they must encourage a new direction in kindergarten programs. If not, they will continue to see the same problems of school failure and drop out in the disadvantaged child that they have seen in past years. In fact educators will be guilty of educational malpractice if they continue with present programs which are such dismal failures when there are effective programs available.

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TABLE 1

MEANS & STANDARD DEVIATIONS ON THE FAMILY BACKGROUND VARIABLES FOR EACH SCHOOL AND GRADE

Family Background Variable	GRADE ONE				GRADE THREE				GRADE FIVE			
	School 1		School 2		School 1		School 2		School 1		School 2	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
Father's occupation	41.932	14.452	27.478	1.719	42.077	13.622	28.023	2.235	34.289	6.329	28.181	3.042
Mother's occupation	25.064	3.374	24.000	0.000	29.456	9.055	24.657	2.938	26.208	5.971	24.000	0.000
Father's education	12.000	2.847	7.000	2.722	12.000	2.492	6.450	2.523	10.550	2.724	5.211	3.824
Mother's education	11.400	1.429	6.389	3.310	11.900	1.619	7.450	3.441	10.000	2.052	7.421	2.457
Parents Home	3.000	0.000	3.000	0.000	3.000	0.000	2.900	0.447	3.000	0.000	3.000	0.000
Other Adults home	0.000	0.000	0.167	0.514	0.100	0.308	0.200	0.523	0.600	0.883	0.579	1.071
No. of children	3.400	1.465	6.333	2.744	3.400	1.314	6.550	3.052	5.350	1.694	5.421	2.652
No. of children home	3.200	1.361	6.111	2.564	3.350	1.268	6.150	2.412	4.550	1.276	4.684	2.428

TABLE 2

MEAN RAW SCORES ON WISC-R

VARIABLE	GRADE ONE			GRADE THREE			GRADE FIVE		
	School 1 $\bar{X}$	School 2 $\bar{X}$	Tukey b	School 1 $\bar{X}$	School 2 $\bar{X}$	Tukey b	School 1 $\bar{X}$	School 2 $\bar{X}$	Tukey b
Information	5.200	3.300	*	9.750	5.950	*	12.550	10.250	*
Similarities	6.650	3.100	*	10.150	6.850	*	13.400	9.500	*
Arithmetic	6.450	3.200	*	9.850	8.000	*	12.650	11.100	*
Vocabulary	12.947	8.900	*	21.900	12.950	*	27.100	19.600	*
Comprehension	9.474	6.000	*	12.950	9.000	*	15.700	13.750	
Picture Completion	10.600	6.000	*	15.550	10.600	*	19.350	16.700	*
Picture Arrangement	9.000	1.300	*	21.800	8.950	*	27.700	18.450	*
Block Design	10.900	3.050	*	21.850	11.700	*	31.750	18.700	*
Object Assembly	13.632	7.500	*	20.400	14.150	*	22.350	19.050	
Coding	35.842	18.950	*	33.000	25.550	*	36.100	34.550	
Mazes	12.222	5.000	*	----	----		----	----	

* p <.05

TABLE 3

MEAN SCALED SCORES ON THE WISC-R

VARIABLE	GRADE ONE		GRADE THREE		GRADE FIVE	
	School 1 $\bar{X}$	School 2 $\bar{X}$	School 1 $\bar{X}$	School 2 $\bar{X}$	School 1 $\bar{X}$	School 2 $\bar{X}$
Information	9.222	6.600	9.300	5.500	8.900	6.400
Similarities	9.944	7.000	10.500	7.650	10.350	6.900
Arithmetic	11.167	7.067	10.850	8.700	11.450	9.150
Vocabulary	9.056	6.733	9.750	5.100	8.950	5.000
Comprehension	11.389	8.800	10.350	7.450	9.250	7.950
Picture Completion	10.278	6.533	10.650	7.150	11.550	9.200
Picture Arrangement	8.889	4.067	10.300	5.400	11.100	7.600
Block Design	10.722	5.933	11.900	8.850	11.650	7.500
Object Assembly	11.333	7.067	12.050	8.900	11.050	9.150
Coding	12.056	7.267	10.350	6.700	8.500	7.900
Mazes	10.588	5.800	---	---	---	---
Verbal Score-scaled	50.778	36.200	50.250	34.400	48.900	34.900
Verbal Score-IQ	100.444	83.000	100.050	80.600	98.200	81.250
Performance Score-scaled	53.278	30.867	55.350	37.000	53.850	41.350
Performance Score-IQ	104.556	74.200	107.200	82.350	104.900	88.000
Full Scale-scaled	104.056	67.067	105.600	71.400	102.750	76.250
Full Scale-IQ	102.389	77.400	103.450	80.050	101.350	83.250

TABLE 4

Mean Raw Scores on ITPA

VARIABLE	GRADE ONE School 1 $\bar{X}$	GRADE ONE School 2 $\bar{X}$	GRADE ONE Tukey b	GRADE THREE School 1 $\bar{X}$	GRADE THREE School 2 $\bar{X}$	GRADE THREE Tukey b	GRADE FIVE School 1 $\bar{X}$	GRADE FIVE School 2 $\bar{X}$	GRADE FIVE Tukey b
Auditory Reception	25.150	14.900	*	34.263	23.700	*	38.750	30.450	*
Visual Reception	17.300	13.650		26.263	20.650	*	29.650	26.300	
Visual Sequential Memory	18.950	15.250	*	20.579	19.950		23.300	22.100	
Auditory Association	22.150	13.550	*	30.684	20.600	*	32.850	29.400	*
Auditory Sequential Memory	25.950	18.700	*	32.263	25.600		34.950	34.250	
Visual Association	18.850	12.400	*	25.263	19.850	*	28.350	25.250	
Visual Closure	23.750	18.400	*	33.211	23.450	*	32.450	33.200	
Verbal Expression	23.250	15.600	*	28.895	23.750	*	28.250	31.650	
Grammatic Closure	17.750	11.400	*	24.947	16.600	*	28.850	25.050	*
Manual Expression	24.700	19.450	*	31.526	25.750	*	27.200	32.950	*

* $p < .05$

TABLE 5

Mean Scores on the Conservation Measure

VARIABLE	GRADE ONE School 1 $\bar{X}$	School 2 $\bar{X}$	Tukey b	GRADE THREE School 1 $\bar{X}$	School 2 $\bar{X}$	Tukey b
Two-dimensional space	2.500	0.474	*	4.000	3.050	*
Number	3.300	1.368	*	3.950	3.600	
Substance	2.150	0.632	*	3.850	2.900	
Continuous Quantity	2.250	1.053	*	3.800	2.800	
Weight	2.350	0.842	*	3.700	3.200	
Discontinuous Quantity	2.250	0.842	*	3.800	2.800	
Area	4.350	3.053		5.800	5.650	
Length	3.550	1.263	*	5.800	4.700	

*$p < .05$

TABLE 6

Mean Scaled Scores on the ITPA

VARIABLE	GRADE ONE		GRADE [illegible]		GRADE FIVE	
	School 1 $\bar{X}$	School 2 $\bar{X}$	School 1 $\bar{X}$	School 2 $\bar{X}$	School 1 $\bar{X}$	School 2 $\bar{X}$
Auditory Reception	35.850	26.700	35.263	27.050	29.727	21.750
Visual Reception	34.600	31.100	36.579	29.450	39.000	31.875
Visual Sequential Memory	38.400	32.250	35.263	34.950	37.000	35.750
Auditory Association	35.450	22.250	38.368	24.250	34.545	26.875
Auditory Sequential Memory	39.150	32.350	38.842	34.350	36.727	26.250
Visual Association	33.100	23.550	34.684	27.650	33.636	30.250
Visual Closure	40.650	34.850	41.789	31.650	34.000	37.500
Verbal Expression	36.950	30.750	33.263	30.600	30.455	33.500
Grammatic Closure	36.150	26.600	34.421	23.700	34.364	27.125
Manual Expression	39.450	34.150	41.158	35.100	31.545	38.375
Sum of Scaled Scores	369.750	295.150	370.158	299.250	341.000	313.250

TABLE 7

Means and standard deviations on the family environment variables for each school and grade

FAMILY ENVIRONMENT VARIABLE	GRADE ONE				GRADE THREE				GRADE FIVE			
	School 1		School 2		School 1		School 2		School 1		School 2	
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
Achievement Press	4.543	0.617	3.183	0.600	4.689	0.530	3.407	0.545	4.396	0.553	3.259	0.682
Language Models	5.625	0.973	3.741	1.129	6.100	0.974	4.208	1.274	5.067	0.550	4.009	1.052
Academic Guidance	5.100	0.902	3.083	1.077	5.317	0.688	3.792	0.935	4.733	0.588	4.474	0.917
Activeness of Family	4.412	0.741	2.646	0.856	4.619	0.807	3.200	0.692	4.294	0.675	3.164	0.743
Intellectuality of home	4.400	0.864	2.458	1.005	4.787	0.828	3.350	1.049	4.688	0.760	3.211	0.902
Work habits of family	3.662	0.882	2.694	0.829	3.912	0.901	3.350	0.534	3.887	0.890	3.382	0.783